CLAIMS:

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. The method of replacing a broken spring plate of a bearing spring plate pedestal, part of which broken spring plate projects from a pedestal base, comprising machining said projecting part and a surrounding area of said pedestal base to flatness, and securing to said base a flexible plate integral with top and bottom mounting blocks, said flexible plate and mounting blocks meeting at an arcuate transition area with a smooth, continuous curve spanning 90 degrees from the flexible plate to the top and bottom blocks, polished and substantially free from stress risers.

2. The method of replacing, with a flexible plate with top and bottom mounting blocks, a broken spring plate of a bearing spring plate pedestal, part of which broken spring plate projects from a pedestal base, comprising machining to flatness an area of said pedestal base surrounding said projecting part, forming in an undersurface of said bottom mounting block a channel wide and deep enough to admit and bridge said projecting part, and securing to said base said bottom mounting block bridging said projecting part.

3. The method of claim 2 including the step of machining the projecting part to a desired height before securing the bottom mounting block to the base.

4. The method of claim 2 wherein said flexible plate is integral with said top and bottom mounting blocks, said flexible plate and mounting blocks meeting at an arcuate transition area with a smooth, continuous curve spanning 90 degrees from the flexible plate to the top and bottom blocks, polished and substantially free from stress risers.

5. The method of claim 2 wherein a narrow unmachined border is left immediately around said projecting part, said bottom mounting block channel being wide enough to bridge over and beyond said narrow border.

6 The method of replacing, with a flexible plate with top and bottom mounting blocks, a broken spring plate of a bearing spring plate pedestal, part of which broken spring plate projects from a pedestal base, comprising machining the projecting plate part, if necessary, to a short height, forming in an undersurface of said bottom mounting block a channel wide and deep enough to admit and bridge said projecting part, adjusting said bottom mounting block to a desired level with respect to said pedestal base, applying to a surface of said pedestal base in the area between said mounting block and said surface, an epoxy adhesive, and securing to said base said bottom mounting block bridging said projecting part, said flexible plate being integral with said top and bottom mounting blocks, said flexible plate and mounting blocks meeting at an arcuate transition area with a smooth, continuous curve spanning 90 degrees from the flexible plate to the top and bottom blocks , polished and substantially free from stress risers.

7. The method of claim 1 including the steps of placing a drill fixture on said pedestal base in the position in which the bottom mounting block is to be positioned, said bottom mounting block having bolt holes through it, and said fixture having corresponding holes through it with the diameter of said corresponding holes being the diameter of the appropriate tap drill, drilling and tapping holes in said pedestal base plate in accordance with the pattern of holes in the fixture, removing the fixture, and bolting the mounting plate to the pedestal base.

8. The method of claim 2 including the steps of forming a channel in a bottom surface of a drill fixture, said channel corresponding to the channel in said bottom mounting block, placing said drill fixture on said pedestal base in the position in which the bottom mounting block is to be positioned, said mounting block having bolt holes therethrough, and said fixture having corresponding holes through it, drilling and tapping holes in said pedestal base plate in accordance with the pattern of holes in the fixture, removing the fixture, forming with epoxy a permanent chock in any gap around the remains of the protruding flex plate and any other gaps between the bottom of the flexible support structure and the mating sections of the pedestal base, and bolting the mounting plate to the pedestal base.

9. The method of installing flexible support plates to support adjacent bearings between the shafts of a high pressure and low pressure turbine to replace flexible plates of a bearing pedestal, said flexible plates projecting from a pedestal support plate, at least one of which plates has broken, comprising removing for the affected turbine, at least a pedestal cover, an upper bearing housing, an upper half of a turbine shaft bearing, a rotor of the affected turbine, a lower half of the turbine shaft bearing, a yoke, and broken portions of the flexible bearing support, leaving a broken surface of the flexible support plate and a pedestal base floor plate upper surface around said broken flexible support plate exposed, so that the projecting part of the broken flexible plate and an area around it can be machined, machining the broken flexible support plate to a condition either flush with the surrounding area or to a short height, thereafter, installing a drill fixture over the exposed surface of the flexible support plate surrounding said broken plate, drilling and tapping holes in said bearing pedestal floor plate in conformance with a hole pattern in said drill fixture that

corresponds exactly with a hole pattern in a bottom block of a new flexible support assembly, setting in place said new flexible support assembly, said new support assembly comprising a flexible plate integral with top and bottom mounting blocks, said flexible plate and mounting blocks meeting at an arcuate transition area with a smooth, continuous curve spanning 90 degrees from the flexible plate to the top and bottom blocks, polished and substantially free from stress risers, said bottom block being secured to said pedestal base plate, and said upper block being bolted to a bearing-supporting yoke, installing trial shim plates over said upper block, installing the yoke, and the lower half of a bearing of the rotor shaft of the affected turbine, mounting a stub shaft on the end of the unaffected turbine rotor coupling hub, so as to duplicate approximately where the journal for the bearing adjacent the unaffected turbine will be located when the affected turbine shaft is repositioned, installing an upper half of said bearing and an upper bearing housing, if necessary, moving the bearing yoke so that the bearing is aligned to the stub shaft, to be in almost identical position to that which will be required when the affected turbine rotor is installed, removing said upper bearing housing, upper half of said bearing , the yoke and the shim plates, positioning and tightening hold down bolts extending through said bottom block and into said pedestal base plate to hold the flexible supports in place, if necessary or desirable, applying epoxy to said pedestal base in an area around said broken flexible plate, at the time the hold down bolts are put in, if epoxy has been used, after the epoxy has hardened, installing said shim plates, yoke, bearing lower half, the affected turbine rotor shaft, bearing upper half, and upper bearing housing, verifying alignment of the rotors and bearings, and if necessary, adjusting the shim plates and transverse alignment

screws to obtain proper alignment, coupling the high pressure and low pressure turbine shafts, and installing said bearing pedestal cover.